

*Ship Friday the 11<sup>th</sup>.*

**Work Order ID 66982**

Thursday, March 03, 2011 10:44:42 AM



Page 1

Item ID:	D3183-045	Accept		Setup	Start			
Revision ID:						Stop		
Item Name:	Bearing Assembly							
Start Date:	3/3/2011	Start Qty:	20.00		Cust Item ID:			
Required Date:	3/11/2011	Req'd Qty:	20.00		Customer:			
Reference:								
Approvals:	Process Plan:	H	Date: 11-03-3	Tooling:	Date:	Run	Start	
	QC:		Date: _____	SPC (Y/N):	Date: _____		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3183	Rev C1								
100		0.00							
	Hardinge CNC LATHE SMALL								
Hardinge	Memo	0.00							
Hardinge CNC Lathe Small	Turn D3183-9 Cap as per Folio FA388□Deburr								
110	QC2- Inspect parts off machine FAI/FAIB	0.00							
	Memo	0.00							
QC									
Quality Control									
120	QC8- Inspect parts - second check	0.00							
	Memo	0.00							
QC									
Quality Control									

11/3/08

20 6

11/3/08

20 11 6

11/3/08

20 10

PTO

W/O: 66982

## WORK ORDER CHANGES

DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector
		MF took 2 caps D3183-9 for a customer. <del>put as</del> 10 and stock as 66982 (D3183-9) QC 21 done on Dartintive for D3183-9 parts	MF	11-03 08 11-03-08	2 ②		

Part No: D3183-045 PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date &amp; initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**Work Order ID 66982**

Page 3

Thursday, March 03, 2011 10:44:43 AM

Item ID: D3183-045

Accept



Setup Start



Revision ID:

Item Name: Bearing Assembly

Stop



Start Date: 3/3/2011 Start Qty: 20.00



Cust Item ID:

Required Date: 3/11/2011 Req'd Qty: 20.00



Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_

Date: \_\_\_\_\_

Tooling: \_\_\_\_\_

Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_

Date: \_\_\_\_\_

SPC (Y/N): \_\_\_\_\_

Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
Description

160



QC21- Final Inspection - Work Order Release

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

QC

Memo

0.00

Quality Control

11/3/2011  
QC

11/03-9

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

# Picklist Print

Page 1

Thursday, March 03, 2011 10:44:48 AM

Work Order ID: 66982



Parent Item: D3183-045



Parent Item Name: Bearing Assembly

Start Date: 3/3/2011

Required Date: 3/11/2011

Start Qty: 20.00

Required Qty: 20.00

Comments: IPP A□04.02.18□New issue□KJ/DS□

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D3183-5 		Manufactured	No			110	Each	22.0000	1	20		3/3/11/03/09	

Bearing

Location	Loc Qty	Loc Code
ST236	22	
47606	1	
52135	2	
64125	19	

MDELRINR1.000

Purchased

No



Delrin Round Bar 1"

Location	Loc Qty	Loc Code
MAT	16.825	
116266	16.825	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**DART**



DESIGN	DRAWN BY	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
		D3183	SHEET 1 OF 4
DATE	04.02.17	TITLE	SCALE 1:1

**RELEASED**  
04.03.01

**DEO ATTACHED**

SHOP COPY  
RETURN TO  
ENGINEERING  
UNCONTROLLED COPY  
SUBJECT TO AMENDMENT  
WITHOUT NOTICE  
WORK ORDER  
NO. CC6982

*BJ 11-03-3*

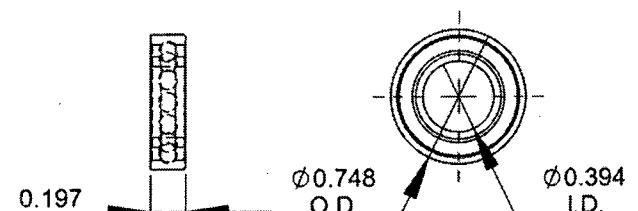
D3121-21 BOLT (1)

D3183-045 BEARING ASSEMBLY (1)

D3121-21 BOLT (1)  
D3183-045 BEARING ASSEMBLY (1)

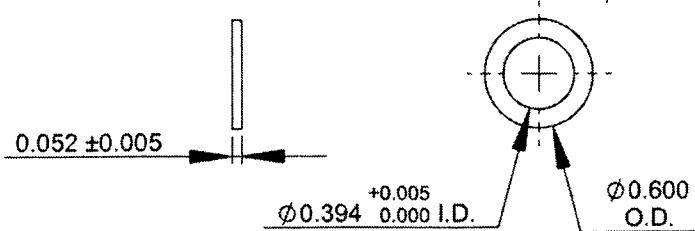
D3183-1 BRACKET FOR -041 (SHOWN)  
OR  
D3183-2 BRACKET FOR -042 (OPPOSITE)  
OR  
D3183-3 BRACKET FOR -043 (SIMILAR)  
OR  
D3183-4 BRACKET FOR -044 (SIMILAR)

**D3183-041 BRACKET ASSEMBLY (SHOWN)**  
**D3183-042 BRACKET ASSEMBLY (OPPOSITE)**  
**D3183-043 BRACKET ASSEMBLY (SIMILAR)**  
**D3183-044 BRACKET ASSEMBLY (SIMILAR)**



#### **D3183-5 BEARING: SPECIFICATION CONTROL DRAWING**

- 1) SINGLE ROW, DEEP GROOVE,  
CONRAD TYPE, SHIELDED
- 2) POSSIBLE SUPPLIER: NSK P/N 6800ZZ
- 3) ALL DIMENSIONS ARE IN INCHES



#### **D3183-7 WASHER**

- 1) MATERIAL: AISI 303 ROUND BAR (M303R)  
ANNEALED
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES

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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

*w/o wa 82*

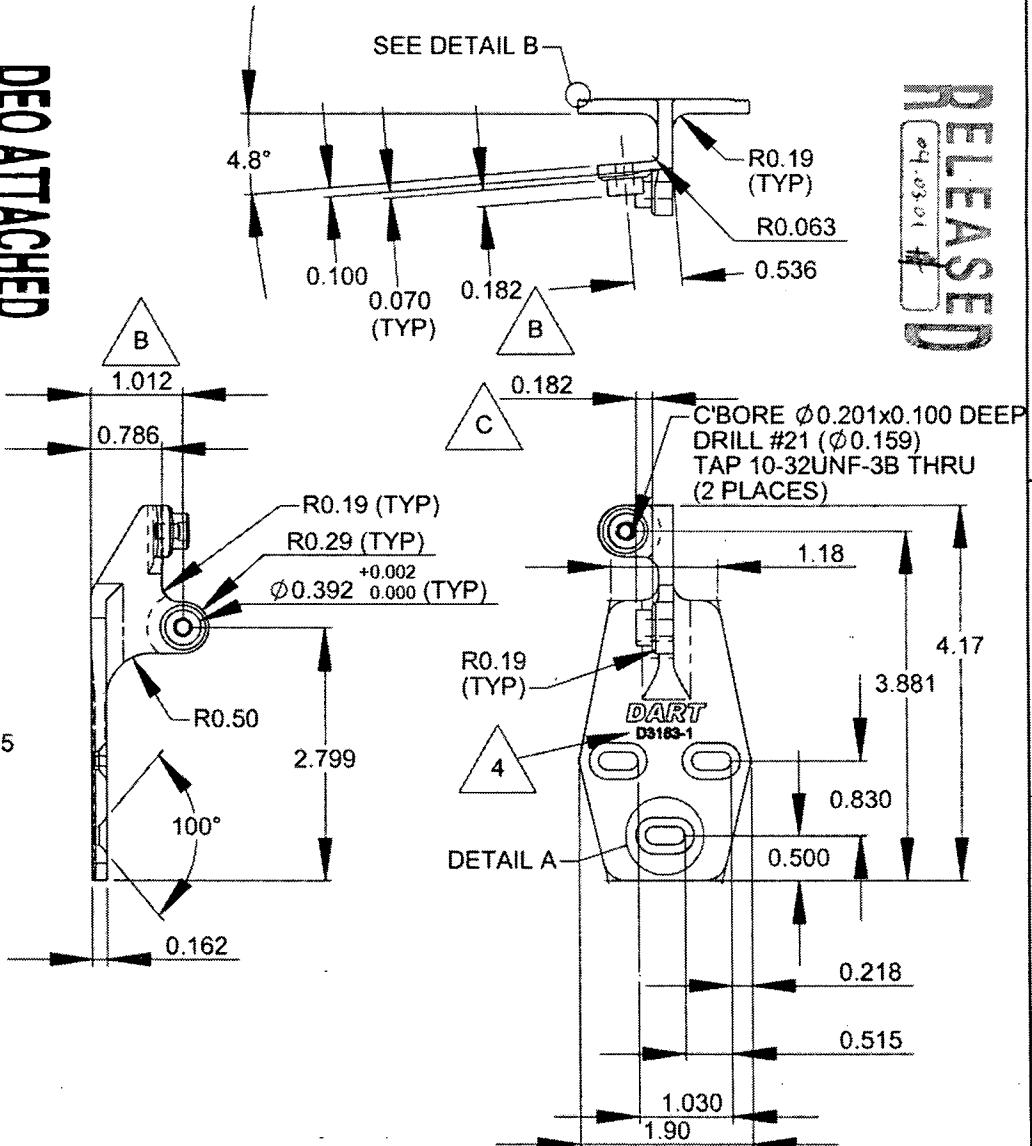
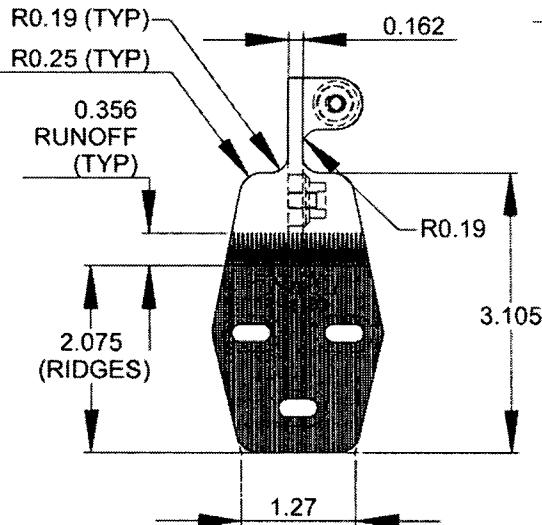
DEATTACHED

RELEASED  
04.03.01



A COPY  
IS  
MADE

DESIGN	DRAWN BY	DART AEROSPACE LTD
CHECKED	APPROVED	HAWKESBURY, ONTARIO, CANADA
		REV. C
		SHEET 2 OF 4
DATE	04.02.17	TITLE D3183
SCALE	1:2	BRACKET ASSEMBLY



D3183-1 BRACKET SHOWN

D3183-2 BRACKET OPPOSITE

- 1) D3183-1 CAN BE MADE FROM D3183-3  
D3183-2 CAN BE MADE FROM D3183-4
- 2) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi
- 3) BREAK ALL SHARP EDGES 0.005 TO 0.015
- 4) ENGRAVE DART P/N & LOGO AS SHOWN
- 5) TOLERANCES ARE PER DART QSI 018 UNLESS  
OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

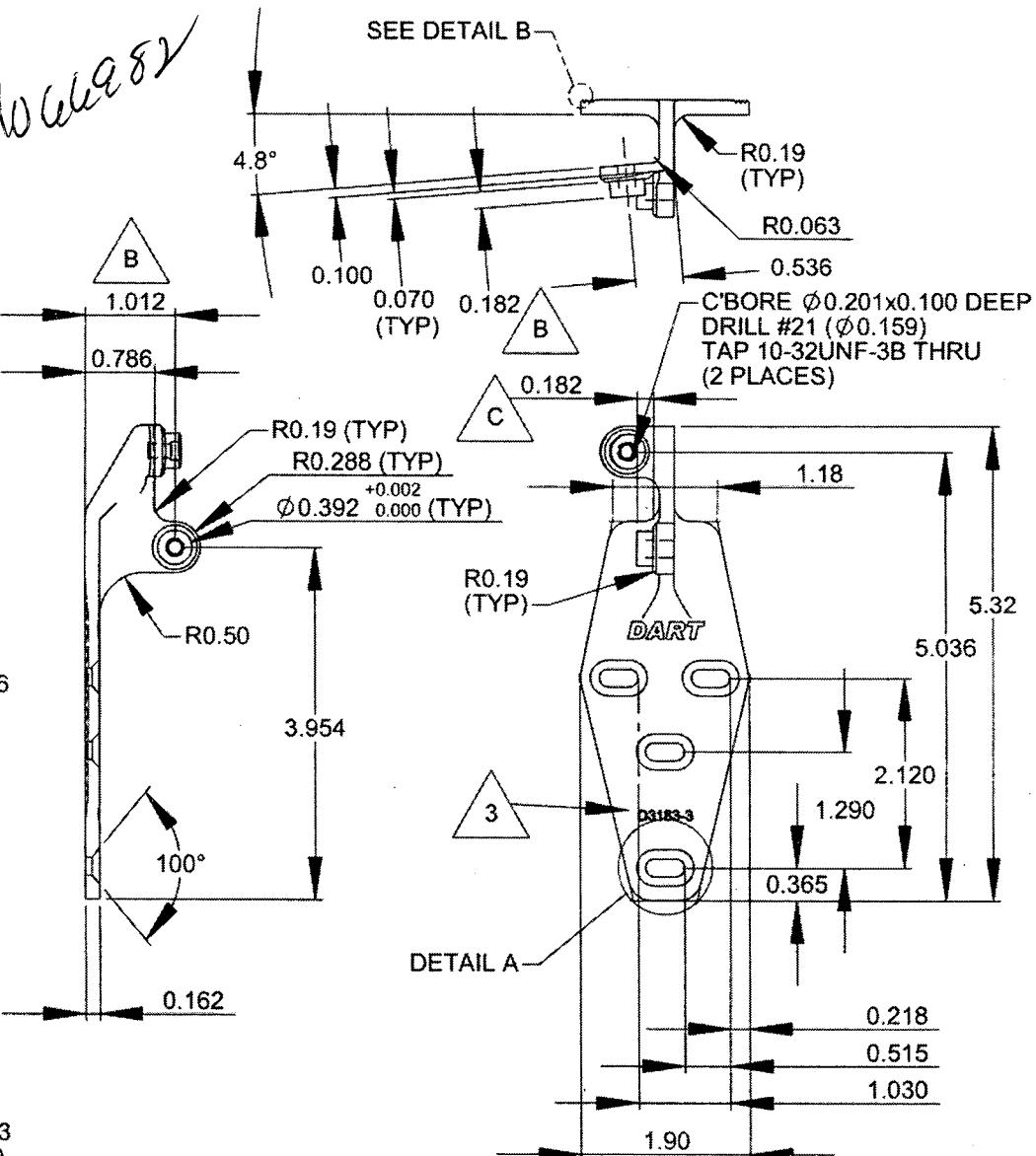
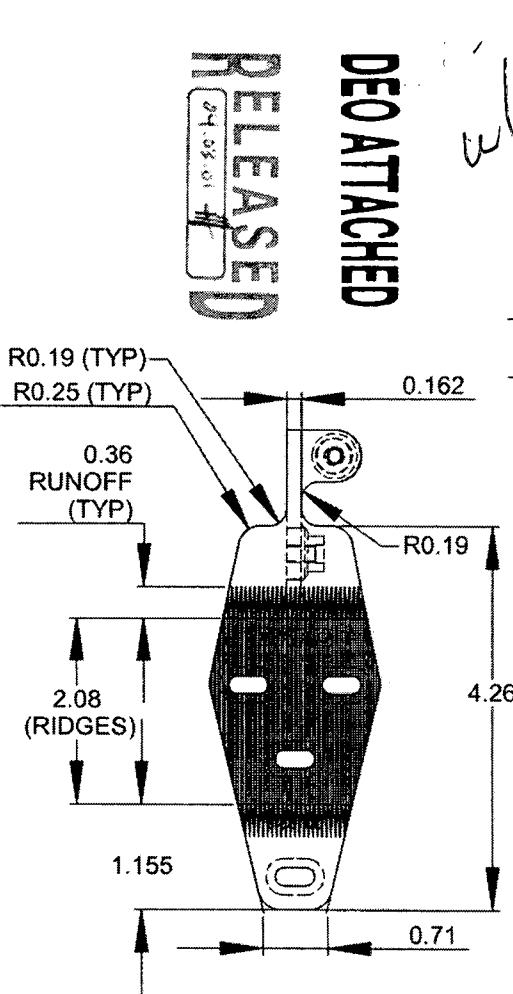


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DESIGN	DRAWN BY	<i>[Signature]</i>	DART AEROSPACE LTD
CHECKED	APPROVED	<i>[Signature]</i>	HAWKESBURY, ONTARIO, CANADA
			DRAWING NO.
			D3183
DATE	TITLE		SHEET 3 OF 4
04.02.17	BRACKET ASSEMBLY		SCALE
			1:2

**RELEASED**  
04-03-01

**DEATTACHED**



D3183-3 BRACKET SHOWN  
(REPLACES BELL P/N 412-030-304-105)

D3183-4 BRACKET OPPOSITE  
(REPLACES BELL P/N 412-030-304-106)

1) MATERIAL: 17-4 SS PER AMS 5604/5643  
(REF DART SPEC. M17-4-B)  
MIN ULTIMATE STRENGTH = 150 ksi  
MIN YIELD STRENGTH = 100 ksi

2) BREAK ALL SHARP EDGES 0.005 TO 0.015

3) ENGRAVE DART P/N & LOGO AS SHOWN

4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED

5) ALL DIMENSIONS ARE IN INCHES

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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NOTE: Date & initial all entries



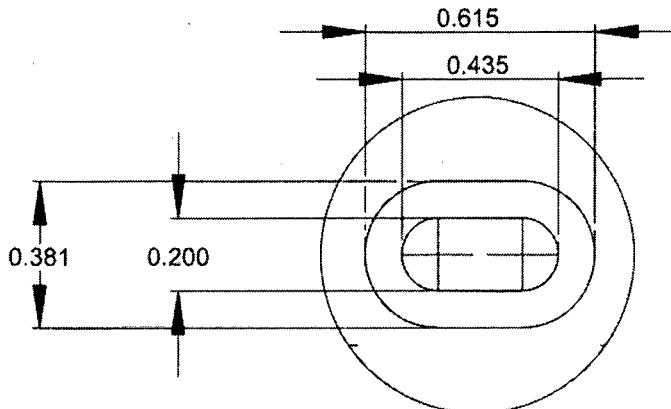
DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	REV. C
		D3183	SHEET 4 OF 4

DATE

04.02.17

TITLE

BRACKET ASSEMBLY

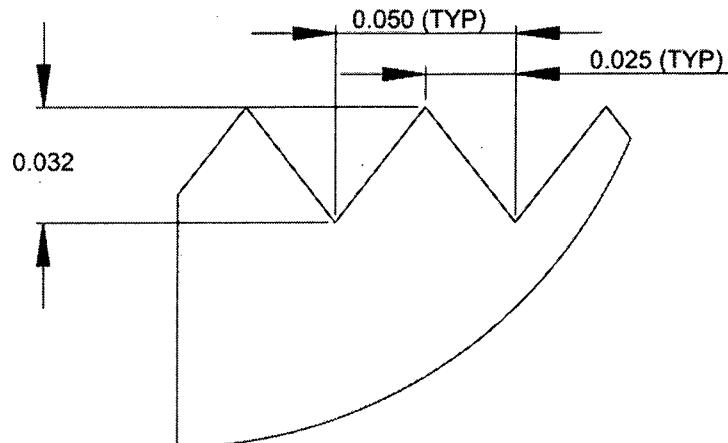
SCALE  
1:1

W106682

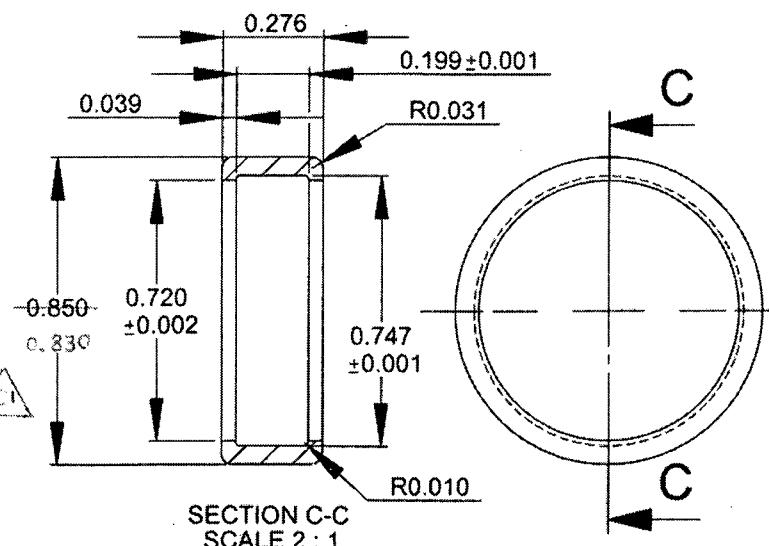
DETAIL A (2 : 1)

RELEASED  
04.03.01

DEO ATTACHED



DETAIL B (20 : 1)

**D3183-9 CAP**

- 1) MATERIAL: DELRIN ROD, Ø1.00  
(REF DART SPEC. M-DELRIN-R1.00)
- 2) TOLERANCES ARE PER DART QSI 018  
UNLESS OTHERWISE NOTED
- 3) ALL DIMENSIONS ARE IN INCHES

**D3183-045 BEARING ASSEMBLY**

- 1) ASSEMBLE D3183-5 BEARING AND  
D3183-9 CAP

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W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D3183	TITLE BRACKET ASSEMBLY	REV C1	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D3183-C1-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>gp</i>	CHECKED <i>jk</i>	MFG. APPR. <i>AA</i>	APPROVED <i>MP</i>	DE APPR. <i>MP</i>		
DATE 10.05.14	DATE 10.06.30	DATE 10.06.30	DATE 10/06/30	DATE 10/06/30	DATE 10/06/30	

D3183-5 BEARING

ADD POSSIBLE SUPPLIER: KML P/N 6800-ZZ

BASIC LOAD RATING REQUIREMENT:  
 Cr = 1720 N (386 lb) MIN [DYNAMIC]  
 Cor = 840 N (188 lb) MIN [STATIC]

REF PAR 10-012

*Velva W. May*

**RELEASED**  
 2010-07-22  
*MP*

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**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

DART AEROSPACE LTD	Work Order:	66982
Description: Cap	Part Number:	A3183-9
Inspection Dwg: A3183, Rev: C		Page 1 of 1

## FIRST ARTICLE INSPECTION CHECKLIST

## X First Article      X Prototype

Measured by:	S.A.
Date:	11/13/18

Audited by:	<u>Amf</u>
Date:	11/03/08

<b>Prototype Approval:</b>	
<b>Date:</b>	

<b>Rev</b>	<b>Date</b>	<b>Change</b>	<b>Revised by</b>	<b>Approved</b>
A		New Issue	KJ/JLM	